KPDES FORM SDAA

Kentucky Pollutant Discharge Elimination System (KPDES)

Socioeconomic Demonstration and Alternatives Analysis

The Antidegradation Implementation Procedure found in 401 KAR 10:030, Section 1(3)(b)3 requires KPDES permit applications for new or expanded discharges to waters categorized as "Exceptional or High Quality Waters" to conduct a socioeconomic demonstration and alternatives analysis to justify the necessity of lowering local water quality to accommodate important economic or social development in the area in which the water is located. This demonstration shall include this completed form and copies of any engineering reports, economic feasibility studies, or other supporting documentation

I. Project Information

Facility Name:897-0446

Location:App. 6000 ft. N/NW of Ary, app. 2700 ft. S/SW of Williams Branch Road junction with Ky. Rt. 476 in Perry county	**County: Perry**

Receiving Waters Impacted: Mac & Nellie and Williams Branch

II. Socioeconomic Demonstration

1. Define the boundaries of the affected community:
(Specify the geographic region the proposed project is expected to affect. Include name all cities, towns, and counties. This geographic region must include the proposed receiving water.)

The areas that would be affected by this mining operation would be in Perry County. Small communities affected by this operation within Perry County are, but not limited to Ary and Stacy. This mining operation is located at the intersection of Williams Branch Road and the intersection of 476 in Perry County. The amendment area includes approximately 274.83 surface acres and approximately 13.40 acres. It is locates on the northern side area of the permit in the northern most part of Williams Branch as well as a portion on te south-western portion of the permit in Mac & Nellie Branch. The Latitude is 37°22'26" and the Longitude is 83°10'03' located on the Noble USGS 7½ minute quadrangle map.

2. The effect on employment in the affected community:
(Compare current unemployment rates in the affected community to current state and national unemployment rates. Discuss how the proposed project will positively or negatively impact those rates, including quantifying the number of jobs created and/or continued and the quality of those jobs.)

See Attachment 2.

The Affect on Employment in the Affected Community

The unemployment rates for Perry County from 2008 to 2009 have been compared to the state and national average rates, and clearly confirm a struggling economy in this area as well as others. This enhances a need for more jobs to allow for economic growth.

	2008	November 2009
Perry County:	6.7%	11.7%
State of Kentucky:	6.4%	10.8%
United States:	5.8%	9.7%

The statistics of 2008 show from a work force of 6,316, that 424 are unemployed. As of August 2009 it shows that from a work force of 6.498, a total of 812 are unemployed. Please note the increase in the number of unemployed. The average tends to raise from month to month.

As shown in the previous chart Perry County has a significantly higher unemployment rate than both the state and national levels . Of the few high wage industries in eastern Kentucky, mining is essential in contributing to local economy in Perry County. This mining operation may employ at least 50 workers, including miners, equipment operators, truck drivers and laborers. This trickles down to preparation plant operators, tipples and shipping of coal to other industries, generating electricity for up to 90% of this nation.

The typical life of a mine is approximately 5 years, guaranteeing employment for this duration. As mines are worked out and approach completion the majority of these workers will transferred to new mine operations and remain employed.

By the generating of at least 50 jobs, this operation will help the unemployment rate to drop. This will in turn provide a higher standard of living, improve retail and various other services within the area.

II. Socioeconomic Demonstration- continued

3. The effect on median household income levels in the affected community:
(Compare current median household income levels with projected median household income levels. Discuss how proposed project will positively or negatively impact the median household income in the affected community including the number of households expected to be impacted within the affected community.)

Current Median household income levels for Perry County were obtained from the Workforce Kentucky website.
Perry County: $26,175.00 State of Kentucky: $40,299.00 United States: $50,740.00

The current median household income levels for Perry County for coal miners are: Approximately $49,187.00.

As shown above, the average miner will earn a substantial amount above the median household income for Perry County at other employment. As many as 50 households will be directly impacted by increased tax revenues in the county. Tax revenue and retail spending lead to improved social conditions with advancement of health care systems, educational systems and improvement of local economy. Economic growth improves quality of life and economic growth leads to better water supplies and sewer systems in areas of great need.

Assuming there are 50 workers employed by a mine site, with the above wages, for a time span of 5 years, this generates approximately $245,935.00 of taxable income per employee.

According to the Kentucky Coal Association, at least 3 indirect jobs are created for ever one (1)coal mining job. Therefore we can assume approximated 150 jobs would be created with this mine operation.

4. The effect on tax revenues of the affected community:
(Compare current tax revenues of the affected community with the projected increase in tax revenues generated by the proposed project. Discuss the positive and negative social and economic impacts on the affected community by the projected increase.)

The most recent severance tax revenues for coal mining in Perry County was an estimated $19,553,256.00 with the gross value of severenced coal being approximately $435,106,046.00. As you can see there has been a significant amount of coal severance money returned to Perry County. As stated before, approximately 50 jobs will be provided directly, and sustained for a period of 5 years or more. On the average a coal miner earns about $49,187.00 annually, which equates to approximately $245,935.00 taxable income into the general tax base and local economy per employee. This money provides for better living conditions, improvements in local economy and better services in the local area.

If the proposed operation mines approximately 1.1 million tons of coal, at $1.80 per ton , it would generate approximately 1.98 million dollars of coal severance tax revenue return, based on a 50% return. This return could be utilized for improving the local economy.

II. Socioeconomic Demonstration- continued

5. The effect on an existing environmental or public health in affected community:
(Discuss how the proposed project will have a positive or negative impact on an existing environmental or public health.)

As many as 50 households will be affected directly by this operation, with many more indirectly impacted by increased revenues in the county. Tax revenues and retail spending tend to improve the social conditions, advancing health care systems, educational systems and local infrastructures. Overall quality of life will be improved. Economic growth leads to cleaner water supply systems and sanitary systems where facilities of this type do not exist.

This project does not directly provide sewage treatment facilities, however the taxes paid by employees can be used to improve municipal water and sewage facilities. Also tax revenue generated from wages earned can be used for local improvement projects, such as water supplies and sewer projects greatly needed in eastern Kentucky.

This project could potentially decrease the poverty level in Perry County by employing 50 employees at an annual salary of nearly $50,000.00 a year. This being almost twice the median wage discussed earlier. Furthermore these mining jobs come with excellent health care plans as well as dental and other insurance plans. The majority of minimum wage jobs either require the majority of coverage to be paid at the employees expense or do not offer coverage at all.

6. Discuss any other economic or social benefit to the affected community:
(Discuss any positive or negative impact on the economy of the affected community including direct and or indirect benefits that could occur as a result of the project. Discuss any positive or negative impact on the social benefits to the community including direct and indirect benefits that could occur as a result of the project.)

The proposed operation will provide approximately 50 jobs and numerous other jobs that support the mining industry. As stated before, approximately $12,296,750.00 will be earned in taxable income over the life of this operation. The money can be used to provide better school, roads etc for the community. An anticipated $1,000,000.00 in salaries will be spent in local economy, supporting additional jobs and generating additional tax revenue.

Continuation and creation of jobs by the proposed operation will help sustain the local economy and sociological progress of the community. Local economy in this area is dependent on mining and all the other economic impacts mining creates. Loss of mining jobs in this area has a large detrimental impact on this region. When jobs are lost thru mining, the people seek employment in other regions, causing a decline in population, which affects the quality of health care systems, roads etc.

Perry County has a population of 29,241 in 2008, with a median household income of $26,175.00. This operation would employ approximate 50 individuals. The average annual salary of a miner in Perry County is $49,187.00 which is almost double the average income of an individual in Perry County. According to Kentucky Coal Association, another 3 indirect jobs are added per one coal job. Therefore 150 additional jobs are created indirectly. This would lower the unemployment rate for Perry County.

III. Alternative Analysis

1. Pollution prevention measures:

(Discuss the pollution prevention measures evaluated including the feasibility of those measures and the cost. Measures to be addressed include but are not limited to changes in processes, source reductions or substitution with less toxic substances. Indicate which measures are to be implemented.)

Silt structures and hay bails were considered, however they were inadequate for this proposed site. Containing the discharge into septic systems or cisterns have been considered for on-site storage. Septic systems are not designed to handle this type of run-off. Use of this type of facility would serve the same purpose as a sediment pond.
This project will indirectly treat existing sources of pollution by improvement of sanitary systems. By generating approximately $12,296,750.00 in taxable income, this money can be used to update sanitary sewer systems for the area. Individual sewage facilities are often inadequate. With increased incomes and tax revenues, discharges into local streams can be corrected.
The proposed bench basins will serve to reduce sedimentation and disturbances within the mine area. The structures will aid in reducing sedimentation and water quality pollution to the receiving stream. This control plan shall be implemented for this project.

2. The use of best management practices to minimize impacts:

(Discuss the consideration and use of best management practices that will assist in minimizing impacts to water quality from the proposed permitted activity.)

Best management practices will be used during the life of the mining operations. These practices will aid in minimizing impacts to downstream areas. These practices will consist of but not limited to the following:

1. Constructing the sediment structures prior to surface disturbance of proposed area.
2. Minimizing the disturbed area during mining to the fullest extent possible.
3. Prompt seeding and mulching of the backfilled and graded mine areas in order to minimize the amount of sediment entering the sediment structure thus reducing the amount of suspended solids.
4. The use of additional sediment control measures during pond removal. These measures will consist of the use of straw bales or silt fences, followed my seeding and mulching as necessary.

Other best management practices may be implemented as new conditions arise. Any measure deemed appropriate by the mine foreman to minimize potential adverse impacts to downstream areas will be utilized to the fullest extent possible.

3. Recycle or reuse of wastewater, waste by-products, or production materials and fluids:

(Discuss the potential recycle or reuse opportunities evaluated including the feasibility of implementation and the costs. Indicate which of these opportunities are to be implemented)

The only significant reuse of water for this mining operation would be redistribution of water over the site. Water could be used for dust control or hydro-seeder in the mine site area. Typically, water distribution of this type is limited to 1,000 gallons day/acre on slopes of 6% or less. The terrain for this operation contains slopes of ± 40% and a run off produced by a 25-year/24 hour storm in excess of ±186,785,579 gallons. Redistribution would not be feasible. With 274.83 acres proposed surface acres of disturbance and slopes of approximately ±40% on site, approximately 275,000 gallons of run off could be reused on the entire proposed area. This leaves an excess of ±186,510,579 gallons of water. Collecting and recycling the run off would require installing piping, pump stations etc at an estimated cost of $120,500,000.00. This cost estimate does not include removal of said piping , pumping stations and cisterns. Due to economic and feasibility constraints associated with the containment of on site water, via piping and cisterns, water re-use will consist of on-site re-distribution and containment with-in said pond structures.

III. Alternative Analysis - continued

4. Application of water conversation methods:
(Discuss the potential water conservation opportunities evaluated including the feasibility of implementation and the costs. Indicate which of, of these opportunities are to be implemented)

Water conservation opportunities exist for this proposed operation. One technique is on-site water re-distribution, which is limited to watering haul roads for dust suppression, hydro-seeding for reclamation and watering reclaimed areas. The water reuse techniques will cost approximately $100,000.00 annually. This will be implemented on this proposed operation. Another method is the use of fire prevention for the surrounding community and permit area due to the availability of water stored within the on-site pond.

5 Alternative or enhanced treatment technology:
(Compare feasibility and costs of proposed treatment with the feasibility and costs of alternative or enhanced treatment technologies that may result in more complete pollutant removal. Describe each candidate technology including the efficiency and reliability in pollutant removal and the capital and operational costs to implement those candidate technologies. Justify the selection of the proposed treatment technology.)

A waste water treatment was considered. The cost of construction of waste water treatment plant to treat the estimated quantity of water generated from 47 inches of annual rainfall, determined to be approximately 186,785,579 gallons per year, would be approximately $1,408,000.00. this cost in addition to the $500,000.00 cost of diverting all surface flow to the plant, would total over $2,500,000.00, the cost of the plant operation, maintenance and chemicals required for the treatment process would be in excess on $1,000,000.00. The removal of waste water treatment plant, at time of bond release would be approximately $2,000,000.00. total cost for the waste water treatment plant construction, maintenance, operation and removal , would be in excess of $6,000,000.00. This in comparison to $1,000,000.00 for the construction and maintenance of sediment structures chosen for this operation, does not seen economically feasible.

III. Alternative Analysis - continued

6. Improved operation and maintenance of existing treatment systems:
(Discuss improvements in the operation and maintenance of any available existing treatment system that could accept the wastewater. Compare the feasibility and costs of improving an existing system with the feasibility and cost of the proposed treatment system.)

This project does not directly provide a sewage treatment facility, however taxes generated from employment can be used to improve existing facilities. Approximately $245,935.00 in taxable income will be generated by the approximate 45 jobs provided by this operation.

The existing treatment facilities are those proposed in the form of sediment ponds. The structures are designed so that all discharges meet effluent limitations. These structures will be routinely inspected for sediment capacity and quality of the discharging water. When the structure has reached or is near its capacity, the material is removed from the pond and allowed to dry. Once dry, it is tested for any possibility for toxicity and disposed of accordingly. The sediment is then blended with other spoil material and used to backfill mine benches, etc. or buried beneath and encased with at least 4' of non-combustible/toxic impermeable material.

7. Seasonal or controlled discharge options:
(Discuss the potential of retaining generated wastewaters for controlled releases under optimal conditions, i.e. during periods when the receiving water has greater assimilative capacity. Compare the feasibility and cost of such a management technique with the feasibility and cost of the proposed treatment system.)

Seasonal or controlled discharge of approximately ±186,785,579 gallons of excess water generated on-site during a 25-year/24 hour storm is best achieved through storage and in pond structures. After on-site water recycling is achieved, a surplus of approximately ±186,510,579 gallons of excess water would require the use of additional pond structures at the proposed project and treatment facilities. Storing water in this manner would allow for a controlled or seasonal discharge, however the cost would be much more significant at approximately 10 million plus dollars to attain proper land, permits and other required resources for storage. The proposed option at approximately one million dollars for permits, land etc, is much more economically feasible.

III. Alternative Analysis - continued

8 Land application or infiltration or disposal via an Underground Injection Control Well
(Discuss the potential of utilizing a spray field or an Underground Injection Control Well for shallow or deep well disposal. Compare the feasibility and costs of such treatment techniques with the feasibility and costs of .proposed treatment system.)

"See the Attached"

9 Discharge to other treatment systems
(Discuss the availability of either public or private treatments systems with sufficient hydrologic capacity and sophistication to treat the wastewaters generated by this project. Compare the feasibility and costs of such options with the feasibility and costs of the proposed treatment system.)

"See the Attached"

IV Certification: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Title:	**Don R Gibson, Director of Permitting and Regulatory Affairs, Kentucky**	**Telephone No.:**	(606)439-0946
Signature:		**Date:**	1/27/10

Attachment 8

8. Land application of infiltration or disposal via Underground Injection Control Well

Underground injection was considered as an option for storing the excess water generated by the proposed project. Containing and storing the excess water on site would require the installation of piping, pump stations, and cisterns at a cost to exceed approximately $308,500,000. The existing abandoned underground mines in the vicinity of the proposed mine site are unknown. When large amounts of water are injected into abandoned underground workings, this increases the risk of blowouts. To avoid this, impermeable mediums and seals must be in place at each opening or entrance, and must be absent from any bedrock fracture in order to prevent re-entrance into the ground or surface water systems. It must also have enough storage volume to accommodate potentially 186,785,579 gallons of water. The abandoned underground mines in the vicinity of the proposed permit area also pose water quality concerns due to unknown amounts of water and the possibility of compromised water currently being stored in the underground mines.

Injection into underground works or into a septic system could adversely affect the local groundwater supply by displacing any water in the area and creating a pressure head. Such an increase in pressure head will create the possibility for additional discharge from these areas and increase the chances for blow-outs which could prove to be a safety hazard. The injected water could possibly re-enter the ground water system and potentially the surface water due to the likelihood of fractured geologic strata associated with the region.

Pollution prevention methods for the proposed project include the use on on-site sediment structures. These structures will be utilized on site of the active mining area as wastewater treatment measures to ensure proper particle settling of all on site water resources prior to off-site discharge, The structures will be constructed in conjunction with the proposed mining plan to ensure proper containment and treatment of on-site wastewater. Construction and maintenance of each structure would be an estimated cost of approximately $60,000.00 for a span of 5 years. Due to safety and cost efficiency, this measure will be implemented in the proposed project.

Attachment 9

9. Discharge to other Treatment Systems

The nearest facility in the immediate vicinity is approximately 10 miles away in Hazard, from the location of the proposed mine site. The estimated cost to install pipeline is $60.00 per ft. For this project the pipe alone would be an estimated $52,000.00. It would also include the installation of approximately 2 pumping stations, at a cost of $150,000.00 each. This would bring the total cost for installation of lines and pumping stations at well beyond approximately $352,000.00. This cost would be in addition to upgrading the existing facility to handle the additional volume. With the projected cost of approximately $60,000.00 for the construction and maintenance of each sediment structure for a five year period, it is economically feasible to construct the sediment ponds to maintain any waste water discharge by the proposed mine area.